# DAM MONITORING

POWERED BY REZATEC, THE #1 GEOSPATIAL AI PLATFORM FOR DAM OWNERS, OPERATORS AND REGULATORS

Boost safety, manage risk and direct ground resources – at scale.

rezatec.com

# Access a detailed view of potential failure across your entire dam or dam portfolio – even across inaccessible locations.

Dam Monitoring delivers the most frequent, accurate insights on unusual changes in ground motion, seepage, vegetation, landslides and downstream hazards, giving you the power to see developments between routine structural surveys.
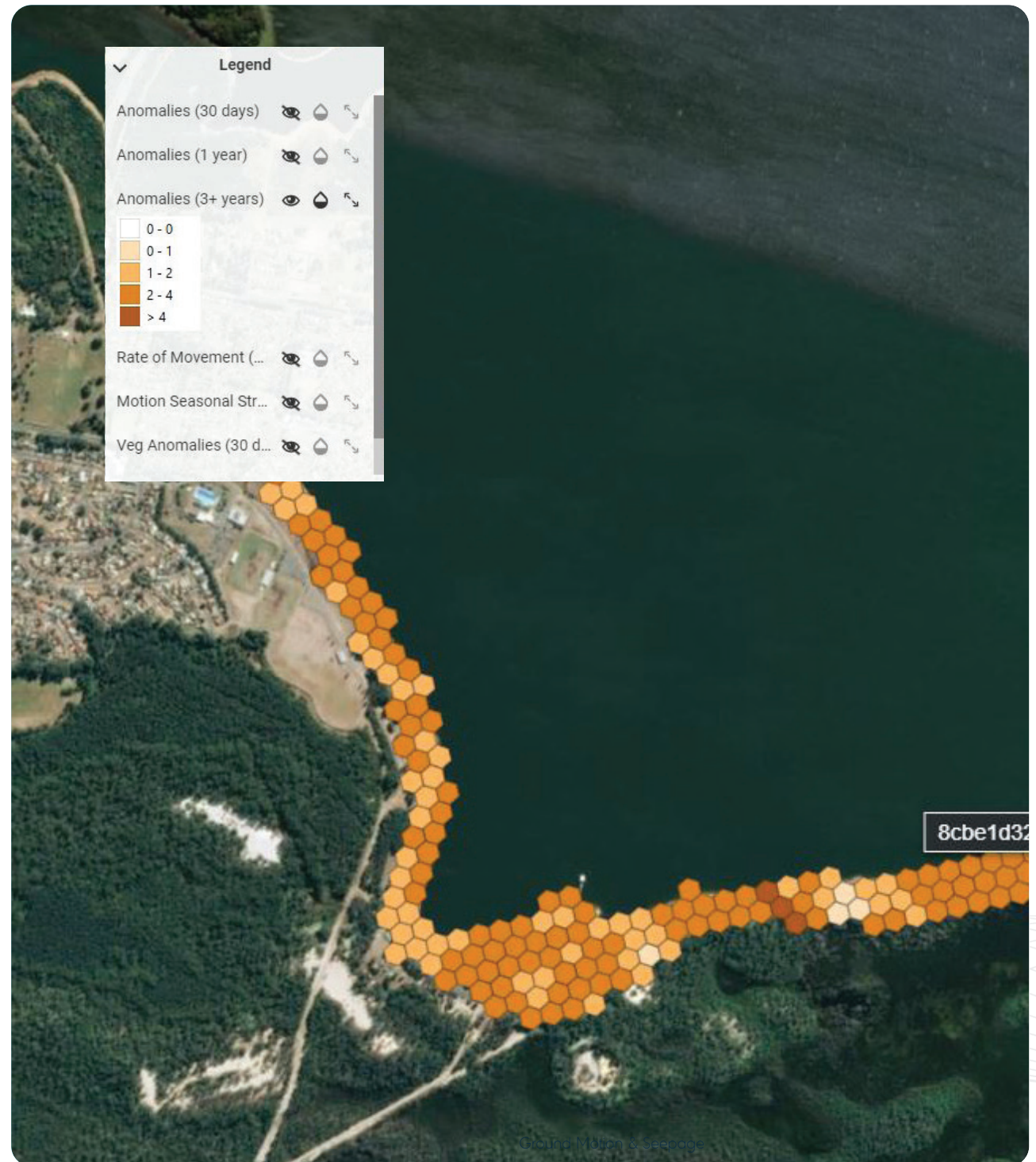
Its unique, historical analysis combines with continual data refreshes to accurately highlight exact risk areas, which means you deploy your investigation and maintenance resources to the right place at the right time.

In addition, Dam Monitoring aggregates, streamlines and analyses all your dam data, enabling you to ensure regulatory compliance and keep your dams safe.

Dam Monitoring comprises four modules, each developed to assess risk and enable reporting across key failure modes:

- · Ground Motion & Seepage
- · Landslide Risk
- · Downstream Hazard
- · Dam Compliance

Powered by Rezatec, the #1 geospatial AI platform, Dam Monitoring gives you the power to leverage the most advanced data sets and analytics available.



Legend

Anomalies (30 days)
Anomalies (1 year)
Anomalies (3+ years)

0 - 0
0 - 1
1 - 2
2 - 4
> 4

Rate of Movement (...
Motion Seasonal Str...
Veg Anomalies (30 d...

8cbe1d32

# Early warning, early fix

Ground Motion & Seepage gives you a detailed historical and current view of structural movement. Its satellite and multiple data feeds, fused with advanced analytics, alert you to unusual changes in ground motion, vegetation and seepage, giving you the power to see millimetric changes between routine structural surveys. And it highlights exact risk areas so you deploy your investigation and maintenance resources to the right places at the right time.

### Build a full risk profile

- Unique historic & current view
- Track anomalous changes
- Data provided across the whole dam
- Ideal for remote locations

### Track issues between surveys

- Frequent, accurate insights
- Correlates trend data
- Alerts of unusual changes
- Millimeter accuracy

### Deploy to the right place

- Define exact risk areas
- Direct investigation & maintenance teams
- Focus on maximum impact
- Data collected remotely

# Assess risk, act fast

Landslide Risk identifies and monitors key landslide indicators and identifies the highest risk areas cost-effectively, at scale. It fuses multiple satellite, geospatial and trigger-event data, like weather, seismic and construction, with the most advanced analytics available. Year-round monthly data insights determine areas of landslide risk across your entire dam infrastructure, giving you the foresight to stay on top of issues, deploy the right maintenance resources and manage cost and safety impacts.
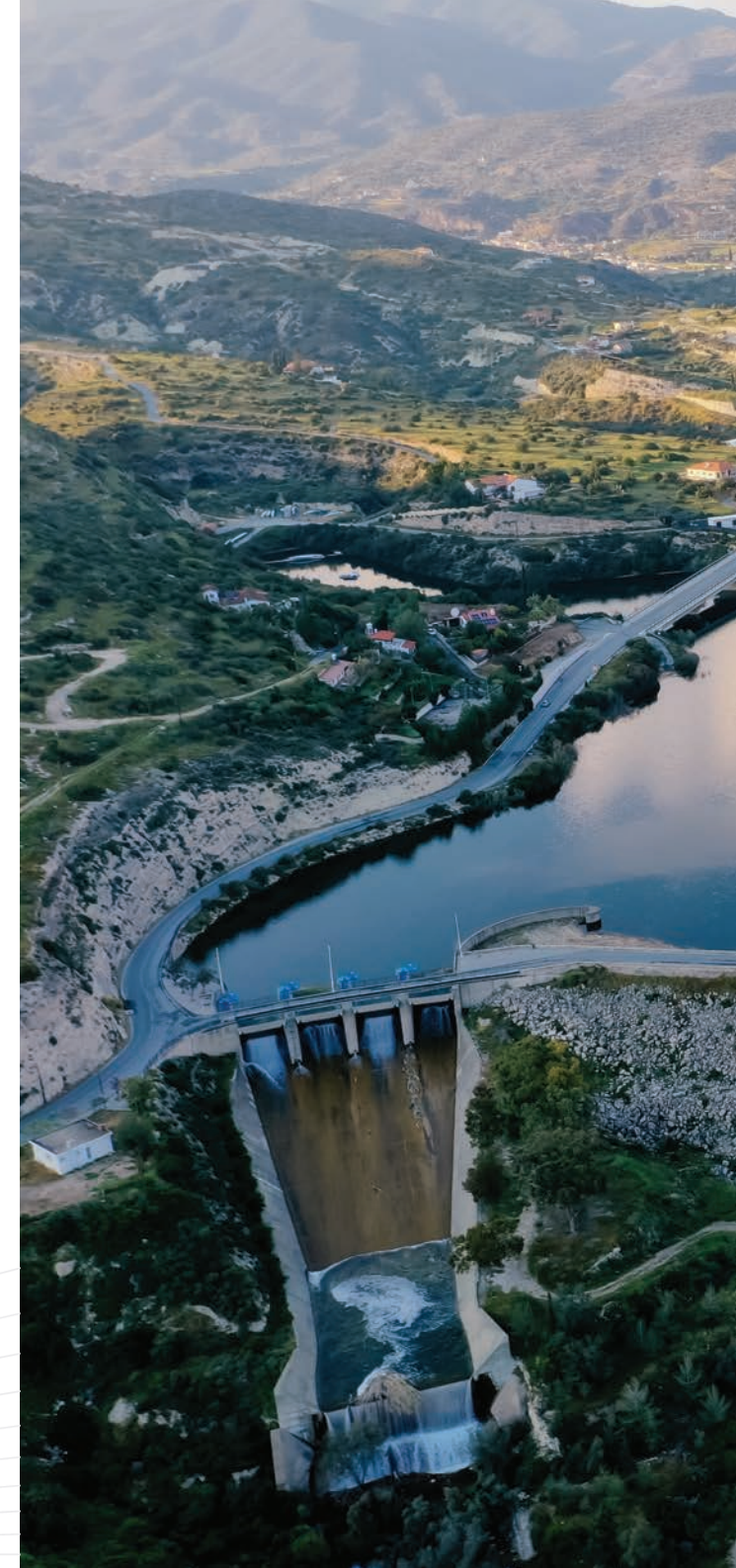
### Reduce safety issues

- Remote monitoring
- No site visits required
- Comprehensive accurate data

### Know what you don't know

- Monitor landslide indicators
- Year-round insights
- Stay on top of risks

### Prioritize resources

- Identify key risk areas
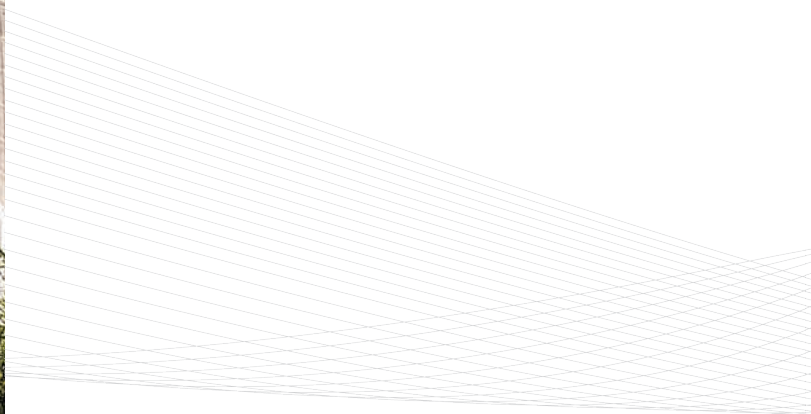- Fix ahead of time
- Mitigate cost & safety issues

# One view, all dams

Downstream Hazard identifies the building changes that matter in your dam inundation zones, across your whole portfolio and your whole state. It gives you accurate insights on developments between inspections, highlights exact risk areas and keeps tabs on low hazard dam urban change. It enables you to deploy your resources to their optimum efficiency and flag for low effort the right low hazard dam zones so you can manage and act on risk.

## REGULATORS -
## ASSESS STATE-WIDE URBAN CHANGES THAT IMPACT HAZARD RATINGS

### Assess hazard rating risk

- View all state-wide changes and all inundation zones
- Focus on areas of concern
- Deploy inspection resources optimally

### Track issues between inspections

- Quickly determine changes
- Assess risk
- Proactively determine an appropriate response

### Optimize resource

- Direct inspection teams to exact areas
- Focus emergency preparations
- Cut non-targeted inspection time

## DAM OPERATORS -
## REDUCE THE EFFORT NEEDED TO TRACK BUILDING CHANGES ACROSS INUNDATION ZONES

### Mitigate risk

- Identify all buildings within each inundation zone
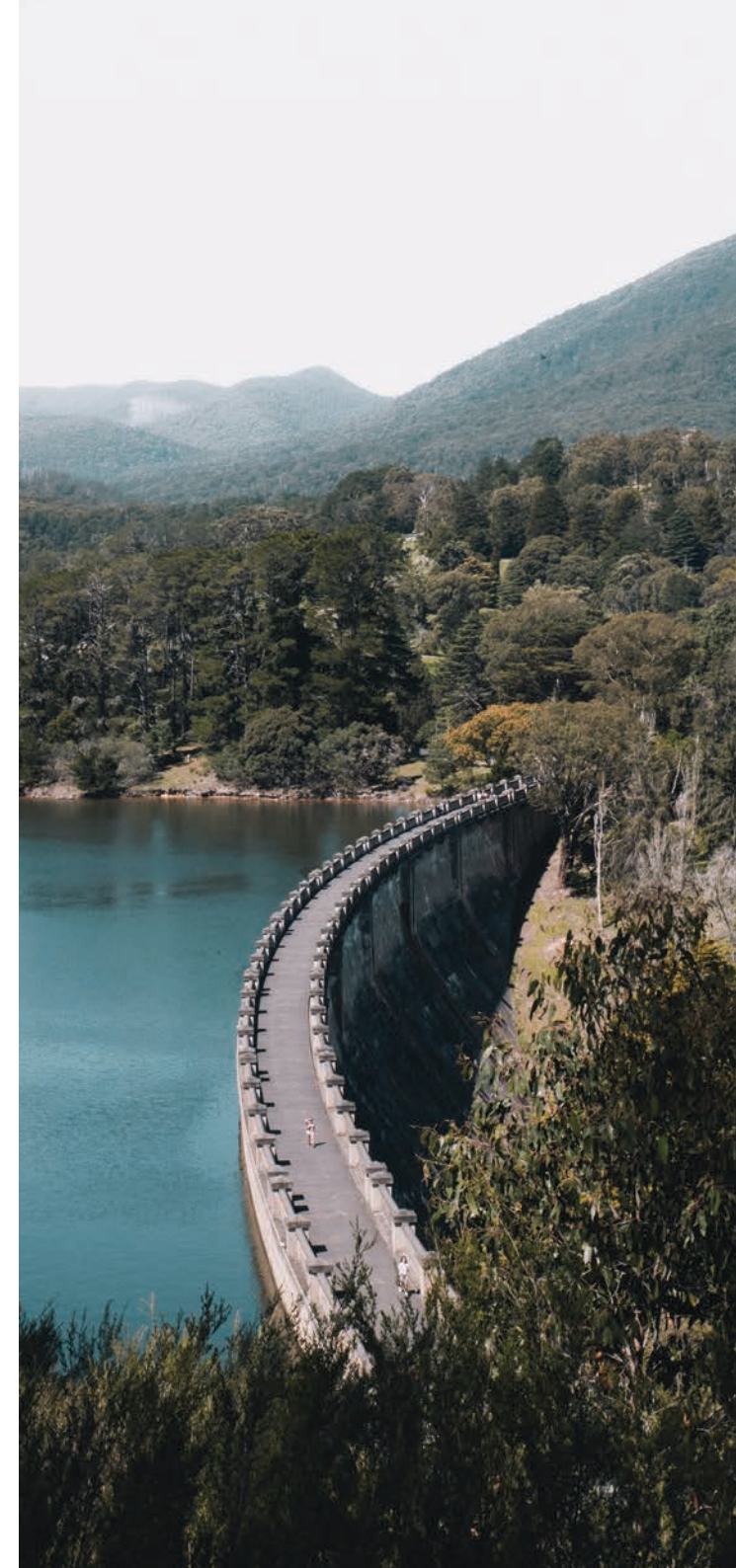- Easily see addresses for each building
- Focus resources

### Track issues across all dams

- Monitor all inundation zones for all dams
- Identify changes quickly & easily
- Plan & action the right remediation

### Drive resource efficiencies

- Target emergency planning
- Optimize when & where you deploy experts to site
- Focus inspection time

Downstream Hazard

# Your reports, made simple

Dam Compliance aggregates into one place and applies powerful analytics to all your dam data, like measurement, piezometer, water levels, rainfall measurements, level surveys and geo technical. It enables you to easily generate reports, ensure regulatory compliance and keep your dams safe. The module combines all your data with Rezatec's advanced algorithms and analytics. It supercharges your understanding of key trends and points of failure, powers your ability to identify procedural gaps and enables you to focus your resources on what they do best.

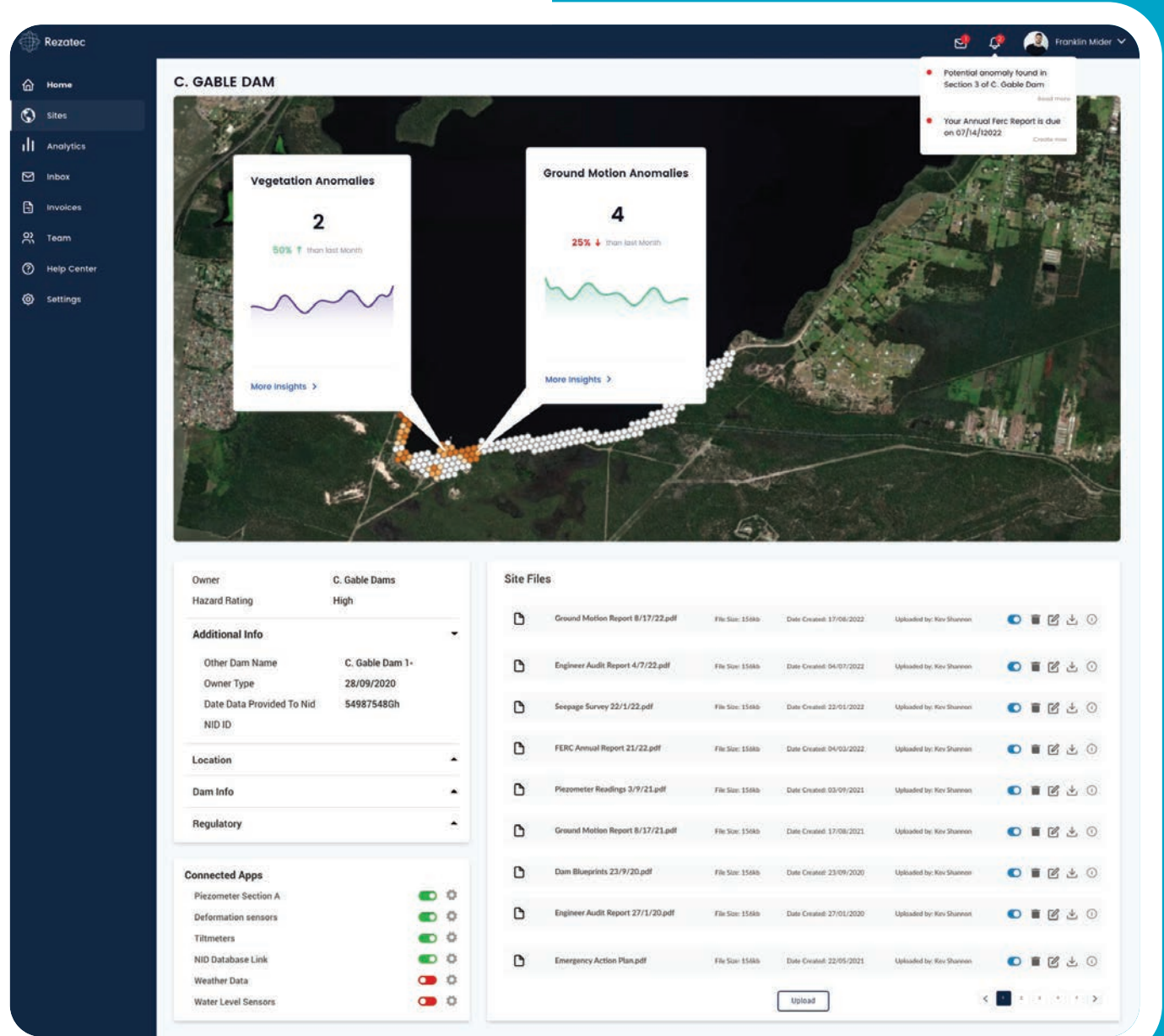## All data, powerful insights

- Collate your dam information in one place
- Apply Razatec's unique analytics
- Track key trends & points of failure

## Simple reporting

- Easily report all dam data
- Incorporate visuals, graphs & charts
- Identify procedural or data gaps

## Ensure safety

- Focus your resources
- Address issues & feedback field data
- Embed operationally



Dam compliance

# Dam Monitoring in action

## New Hampshire Department of Environmental Services

NHDES' Dam Bureau ensures safety, maintenance and repair of 300 state-owned dams. In total, there are 2,600 dams across New Hampshire with 800 classified as hazardous. The Bureau is confident Dam Monitoring detects the smallest movements and identified deformation at their pilot site, Goose Pond Dam. Now with additional sites being monitored, their team can prioritize repairs and instrumentation where needed and do a better job at identifying risks and deploying the right resources.

## John M. McCain, P.E., Dam Safety Program Manager

South Carolina's regulated dams are classified based on potential loss of human life or property damage in the event of failure or improper operation of the dam. Currently, the evaluation process is manual and time intensive. Downstream Hazard can remotely, accurately, and more frequently identify dams with specific changes in structures within flood zones. This can enable South Carolina DHEC to prioritize specific dams, free up staff time to reinvest in important field work and validations, increase reliability and confidence in knowledge of risk, and focus on re-classification and emergency action plans.

## SJWD

SJWD Water District is a public water utility in Spartanburg County, South Carolina. It owns five dams, four of them clas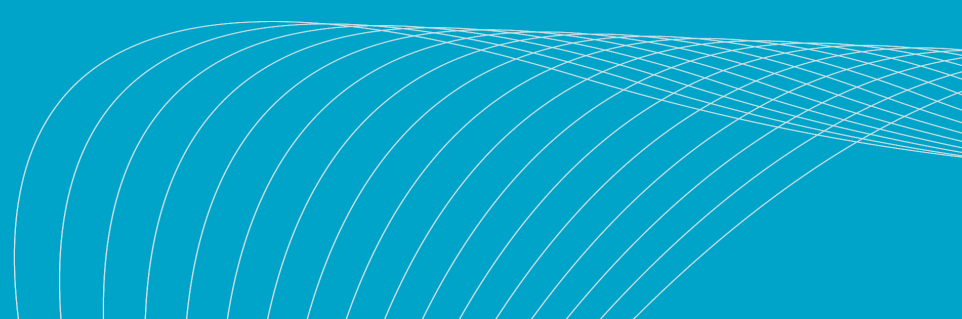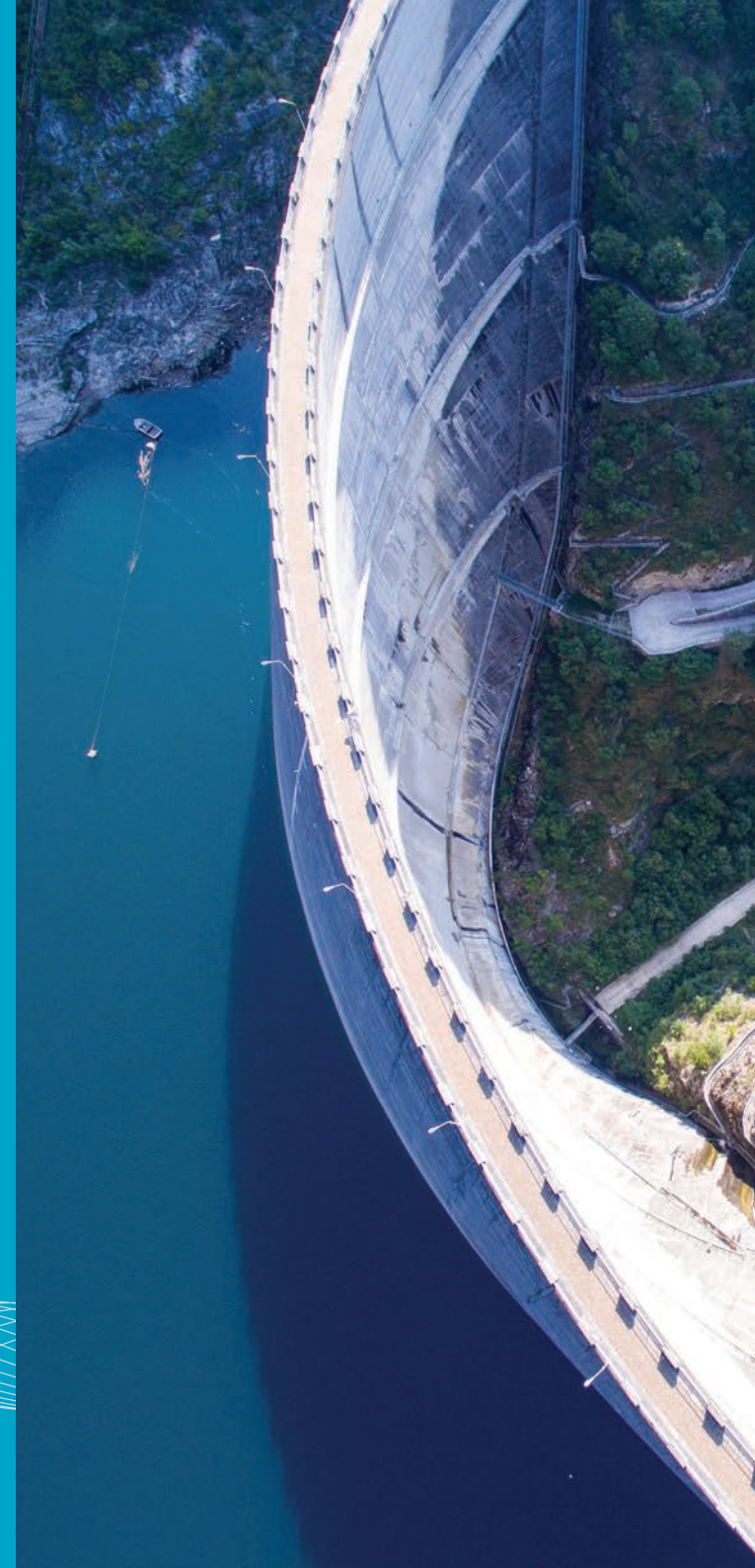sified as high or significant hazard. South Carolina Department of Health and Environmental Control, partnered with SJWD to use Dam Monitoring to track changes that impact dam integrity. Instead of replacing inspections, Dam Monitoring enhances decision making by providing new insights. This empowers SJWD with knowledge on its dams and enables better planning for capital improvements.

## LS Power

This US-based energy company is adopting innovative new technology to help managers and engineers understand their dams' exposure to risk. Following its acquisition of four dams, LS Power needed to understand the dams' condition to direct resources to the right place. Having delivered three years' worth of historical data analyses, Dam Monitoring enables the energy company to monitor metrics on an ongoing basis and assist with regulatory reporting, including FERC's Dam Safety Surveillance Monitoring Report.

# Powered by Rezatec

Dam Monitoring is a geospatial AI product providing a central platform for all dam-related data that remotely monitors risk, at scale. Its satellite and multiple data feeds fuse with the most advanced analytics on the market to bring you insights on key anomalies and indicators for failure modes. Built on Rezatec, the #1 geospatial AI platform, Dam Monitoring is rapidly becoming the tool of choice for dam owners, operators and regulators who need frequent risk insights across whole structures to efficiently direct ground resources, boost safety and mitigate risk.

 **Rezatec**